

N<sup>o</sup> 12,249



A.D. 1906

*Date of Application, 25th May, 1906*

*Complete Specification Left, 24th Dec., 1906—Accepted, 2nd May, 1907*

PROVISIONAL SPECIFICATION.

**"Improvements in Tyres for Vehicle Wheels".**

I, JEAN MOLAS, of 94, Hewitt Road, Harringay, London, N. Engineer; do hereby declare the nature of this invention to be as follows.

This invention relates to tyres for vehicle wheels and has for its chief object provide an elastic tyre which, whilst composed entirely of metal and having a tread or wearing portion constituted by a jointless rigid metal ring, shall nevertheless be capable of yielding equally in every radial direction and of transmitting driving power equally at all points in its circumference.

The improved tyre is composed of three main parts each consisting of an annular element, these three parts (which may for convenience be termed the tread, the spring, and the abutment or straining ring respectively) being so arranged as to form concentric annuli whereof the tread ring is outermost, the abutment or straining ring is attached to the felloe or rim of the wheel, and the spring ring is interposed between the other two.

The tread ring, which is continuous, jointless, and rigid, is preferably of channel form in cross section with the flat side outermost and the inner surfaces of its flanges extending in planes parallel to that of the wheel. The spring ring is of crescent shape in cross section, its edges being deeply notched at frequent intervals so that the ring may constitute in effect as many independent springs. The concave surface of the spring ring is preferably the inner surface, the convex outer surface being fixed at intervals to the rigid tread ring by means of screws or bolts or equivalent fastenings.

The spring ring, which is non-continuous, is preferably in a single length and introduced into the hollow space constituted by the channel of the tread ring by its ends being overlapped or sprung together, the circumferential length of the ring being such that when its ends abut against one another its outer periphery will fit accurately against a seat in the channel of the tread ring.

The abutment or straining ring when mounted in position has an internal diameter adapted to fit upon the felloe or rim of the wheel, and an external diameter greater than the internal diameter of the tread ring flange, between which the abutment ring is fitted to work in a direction parallel to the plane of the wheel.

The abutment ring is non-continuous and is rendered capable of being inserted in position within both the tread and spring rings by virtue of its length being less than is necessary to completely surround the felloe or rim of the wheel. The abutment ring is of spring metal and has a tendency to contract until its external diameter is diminished sufficiently to enable the ring to be introduced within the tread ring and spring ring. When in this position, the abutment ring is expanded to the full diameter (so as to expand and put an initial stress upon the spring ring) by means of a suitable tool, its subsequent contraction being prevented by a key, forming a continuation of the main portion of the ring, inserted in the gap or interval between its ends. The stress put upon the spring ring is sufficient to prevent the latter from creeping relatively to the abutment ring.

The abutment or straining ring is now ready to be passed over the felloe or

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*Molas's Improvements in Tyres for Vehicle Wheels.*

rim of the wheel, to which it is fixed by bolts or screws and whence it may be removed and its parts separated, when required, by reversing the operations just described.

It will be obvious that two or more spring rings may be employed side by side within the same tyre, and also that the abutment or straining ring may be of channel form and adapted to fit over the outer faces of the tread ring instead of inside the latter, which may in that case be of plain or other than channel form in cross section.

The outer periphery of the tread ring may contact with the ground, or may be provided with a wearing tread of metal or other material shrunk on or otherwise fixed to it.

Dated this 25th day of May 1906.

A. M. & WM. CLARK,  
Chartered Patent Agents,  
53, Chancery Lane. London.

## COMPLETE SPECIFICATION.

## "Improvements in Tyres for Vehicle Wheels".

I, JEAN MOLAS of 94, Hewitt Road, Harringay London. N. Engineer; do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

This invention relates to tyres for vehicle wheels and has for its chief object to provide an elastic tyre which, whilst composed entirely of metal and having a tread or wearing portion constituted (or carried) by a jointless rigid metal ring, shall nevertheless be capable of yielding equally in every radial direction and of transmitting driving power equally at all points in its circumference.

In the accompanying drawings, Figure 1 is a cross section of the rim portion of a wheel having the improved elastic tyre applied to it. Figure 2 is a similar view (drawn to a smaller scale) of the tyre shewn separately as it would appear when built up complete in readiness to be applied to the rim or felloe of the wheel.

The improved tyre is composed of three main parts, whereof one is attached to the wheel, another is displaceable in the plane of the wheel, whilst the third forms a resilient element interposed between the other two. Each part consists of an annular element, the three parts (which may for convenience be termed the tread ring, the spring ring, and the abutment ring or straining band respectively) being so arranged as to form concentric annuli whereof the displaceable tread ring A is outermost, the abutment ring or straining band B is attached to the felloe or rim C of the wheel, and the spring ring D is interposed between the other two.

The tread ring A, which is continuous, jointless, and rigid, is preferably (as shewn) of channel form in cross section with the flat side outermost and the inner surfaces of its flanges *a, a* extending in planes parallel to that of the wheel. The resilient element is preferably constituted by a spring ring D of crescent shape in cross section, whose edges are deeply notched at frequent intervals (as indicated at *d*, Figure 2) so that the ring may constitute in effect as many independent springs. The concave surface of the spring ring D is preferably the

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Fig. 1.

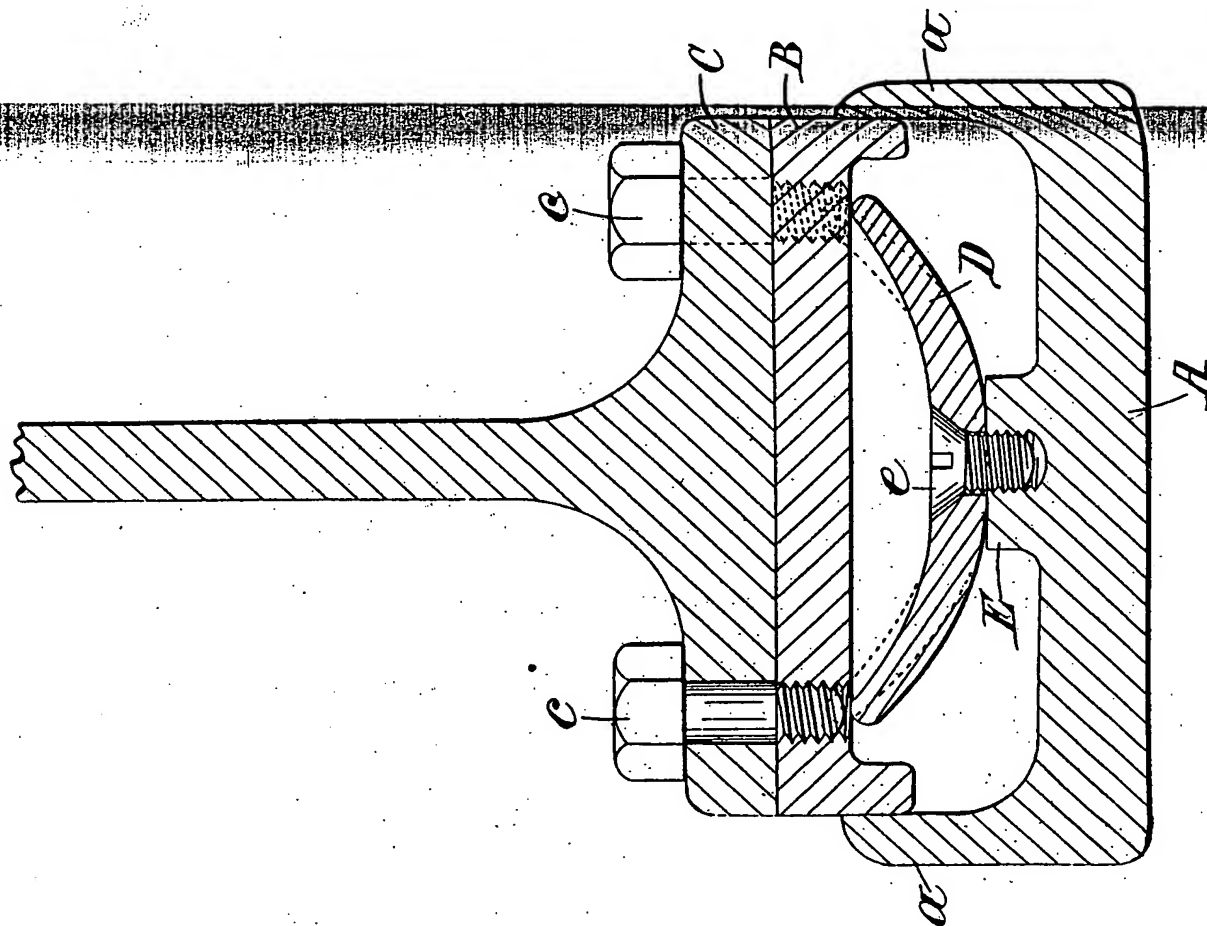
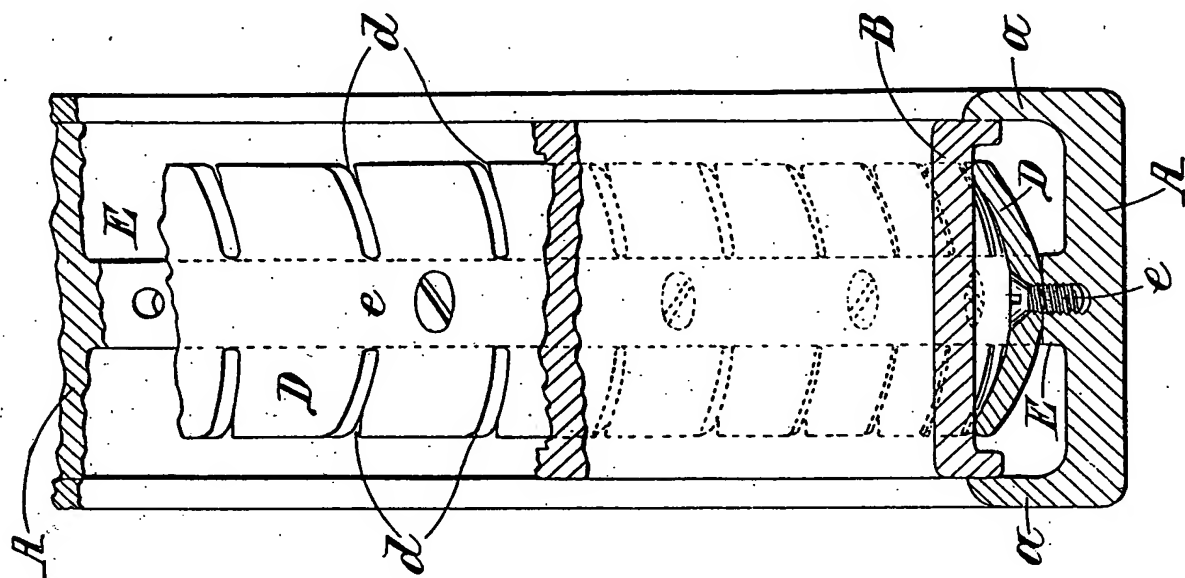


Fig. 2.



[This Drawing is a reproduction of the Original on a reduced scale.]